Revenue and Macroeconomic Effects of a 70% Marginal Tax Rate

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Abstract: *Recently, there has been considerable discussion of a significant increase in the top marginal income tax rate. A salient top marginal tax rate is 70%. This note simulates the effects of a 70% top rate on different groups of filers and shows the impacts on revenue and macroeconomic aggregates. We find that an increase in the top marginal tax rate to 70% raises between $5 billion and $250 billion per year over the first 10 years, depending on the size of the top bracket to which this rate is applied. However, our macroeconomic simulations show that a 70% top rate lowers GDP by between 1.7% and 0.1% in the near term, although there may be positive effects on GDP in the longer term.*

Since the inception of the income tax in the United States in 1913, the top marginal tax rate on ordinary income has ranged from 6% to 94% (see Figure 1). As recently as 1981, the top marginal tax rate on ordinary income was 70%, with rates falling significantly as a result of the Economic Recovery Tax Act of 1981 and the Tax Reform Act of 1986.

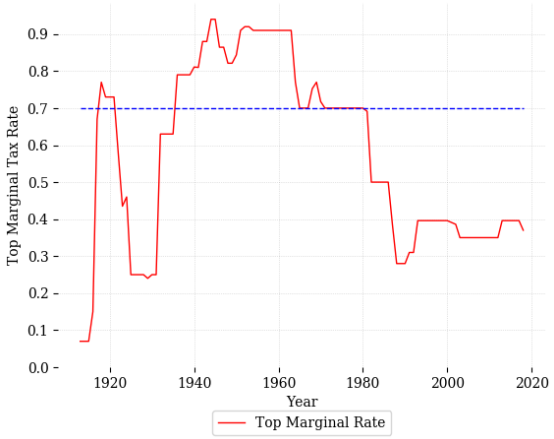

Figure 1. Historical Top Marginal Income Tax Rates

A high top marginal tax rate has reentered the discussion with a recent suggestion by Representative Alexandria Ocasio-Cortez of imposing a 70% marginal tax rate on incomes over $10 million. This suggestion appears popular with the general public.[1] A top rate of 70% has salience as a round number, but it is also close to the top rate of 73% that Diamond and Saez (2011) find as the optimal top income tax rate in the United States.

In this *Quantitative Note*, we simulate the effects of increasing the top marginal tax rate on ordinary income from its current 37% to 70% applied to income (1) in the top two tax brackets, (2) in the top tax bracket, (3) over $1 million, and (4) over $10 million. We do not change the rates applied to capital gains income. We use the Tax-Calculator microsimulation model to show the effects of these policy changes on revenue and their distributional impact. We then use a general equilibrium overlapping generations model, OG-USA, to simulate the effect of the four policies on macroeconomic aggregates.

We find that the increased tax rates raise significant amounts of federal tax revenue, especially when the 70% rate is applied on all income in the top two brackets and when taxpayer responses to the increases in rates are not accounted for. Tax-

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[1] The poll was conducted by Hill–HarrisX and asked voters, "Would you favor or oppose a tax proposal that would apply a 70% rate to the 10 millionth dollar and beyond for individuals making $10 million a year or more in reportable income?". Fifty-nine percent of respondents answered "yes".

payer behavioral responses reduce the revenue gains by more than half. Increased tax revenue is accompanied by increased economic distortions and larger negative effects on gross domestic product in the near term.

1. Microsimulation Model Results

1.1 Revenue Effects

We begin with an analysis of the static revenue gains associated with four policy changes simulated using the Tax-Calculator microsimulation model. Simulating these four policies show that they would increase the tax revenue from individual taxpayers by between $349 billion and $4.4 trillion over the 2019-2028 budget window. Applying a 70% rate to all income in the top two tax brackets increases tax revenue by $4.4 trillion. When applied to the more narrow base of incomes in excess of $10 million, an increase in the top rate to 70% raises about $349 billion in additional revenue over the 10 year budget window.

Taxpayers will respond to the increases in marginal tax rates, for example, by reducing labor supply or deferring income realizations. To simulate the effects of such behavior on revenue, we use the Behavioral Responses module with Tax-Calculator.[2] Using this module, we simulate the reforms again, but under the assumption that taxpayers respond to higher taxes by reducing taxable income. For these policy experiments, we assumed a substitution elasticity of 0.25. Table 1 relates total revenue from individual income an payroll taxes under current law and each policy scenario, along with the percentage change in tax receipts relative to current law. Under each reform, total revenue raised decreases when compared to the static numbers as individuals reduce their taxable income in response to the increased marginal tax rate. When accounting for behavioral responses, these policies raise between $108 billion and $2.0 trillion over the 2019-2028 budget window. These revenue gains are less than half of the revenue gains found without considering changes in taxpayer behavior.

1.2 Distributional Impact

The burden of these tax changes fall almost entirely on top earners. At least 92.5% of the total change in tax liability comes from the top one percent of earners under each policy scenario. Moving the 70% rate down the income distribution has a significant impact on both revenue raised and how many of the top earners see a rate increase. Figure 2 summarizes the impacts of the changes in marginal tax rates across the income distribution. Panel (a) shows the percentage changes in after-tax income by income percentile.[3] Panel (b) of Figure 2 shows the average marginal tax rate by percentile of expanded income.

Taxing only income above $10 million at 70%, results in a tax increase for about 0.6% of the top one-percent of earners. Under this policy, essentially no filers in the 95-99th percentiles see a decline in after-tax income.

As we move the top marginal tax rate further down the income distribution, we see more effects outside the top one-percent of earners. However, applying a 70% rate to income above $1 million effects 23.3% of the top one-percent, but none of the 95-99th percentile. When the top rate of 70% is applied to all income in the top bracket, 54.8% of the top one percent face a tax increase. Finally, assigning a rate of 70% to the top two income brackets raises $2 trillion in revenue over the budget window, with 76.2% of the top one-percent and 15.2% of the 95-99th percentile facing tax increases.

The effect of the high marginal tax rate across the income distribution can be visualized by looking at the average marginal taxes by income percentile in Figure 2b. Here one can see the order and magnitude of the increase in marginal tax rate reflects how much of the income distribution the policy is designed to reach. In this view, it's clear that all of these policies are very targeted at the very top of the income distribution.

2. Macroeconomic Effects

The OG-USA general equilibrium macroeconomic model allows us to simulate the effects of individual behavior on macroeconomic variables as well as the feedback from changes in those macroeconomic variables on the population of taxpayers. In this model, an increase in the top marginal tax rate has the effect of reducing incentives to work, save, and invest among those at the top of the income distribution. Although the number of tax filers directly affected by these reforms is small, the filers who are affected account for a disproportionate amount of aggregate savings and represent some of the most productive workers.

As a result of the reduced labor supply and savings of those at the top of the income distribution, effective labor hours and investment both fall, reducing the gross domestic product. Figure 3 shows the effects on GDP, in levels and in percentages changes from the CBO baseline. In 2020, GDP is expected to be about 1.5 percent lower than under current law if the 70% marginal tax rate applies to all income in the top two brackets. After 10 years, the effect on GDP from a rate of 70% on the top two brackets is about half the size of it's effect in 2020, at 0.8%. This is because the increase in tax revenue decreases the amount of crowding out we see under current law, where large

[2]The Behavior Responses module estimates partial-equilibrium behavioral responses to changes in the US federal individual income and payroll tax system as simulated by Tax-Calculator.

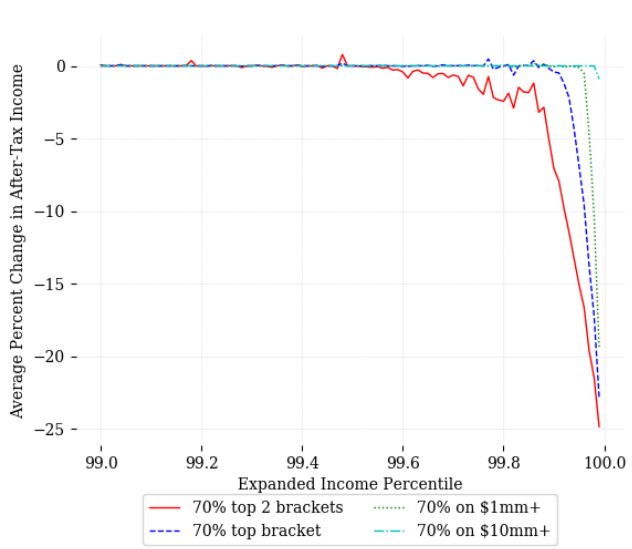
[3]The income concept used here is "expanded income", which is found by taking total income from tax Form 1040 and adding back tax exempt income items reported on the tax return.

Table 1. Partial Equilibrium Revenue Estimates, Current Law vs. 70% Top MTRs

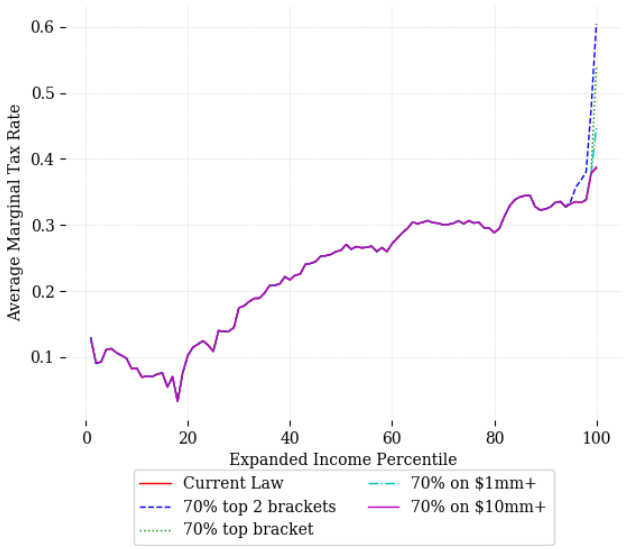
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2019-2023	2019-2028
Current Law	2,834	2,968	3,089	3,214	3,349	3,495	3,650	4,039	4,219	4,409	15,455	35,267
70% top 2 brackets	3,042	3,179	3,305	3,436	3,578	3,735	3,902	4,170	4,358	4,554	16,540	37,259
Pct Change	7.32%	7.12%	6.98%	6.89%	6.85%	6.87%	6.91%	3.25%	3.28%	3.29%	7.02%	5.65%
70% top bracket	2,984	3,120	3,243	3,372	3,513	3,666	3,830	4,158	4,345	4,541	16,232	36,772
Pct Change	5.30%	5.12%	4.99%	4.91%	4.89%	4.89%	4.92%	2.95%	2.98%	2.99%	5.03%	4.27%
70% on $1mm+	2,943	3,078	3,200	3,327	3,466	3,617	3,779	4,105	4,289	4,482	16,015	36,287
Pct Change	3.85%	3.70%	3.60%	3.52%	3.50%	3.50%	3.52%	1.65%	1.66%	1.66%	3.63%	2.89%
70% on $10mm+	2,847	2,981	3,102	3,227	3,362	3,509	3,665	4,043	4,224	4,414	15,520	35,374
Pct Change	0.47%	0.43%	0.41%	0.40%	0.40%	0.40%	0.41%	0.10%	0.11%	0.11%	0.42%	0.31%

Dollar values in billions.
Revenue totals are for the individual income tax and payroll taxes.
Percent changes are reported relative to current law.
Top two brackets and top bracket refer to the individual income tax brackets defined under current law.
Behavioral responses are found under an assumption of an elasticity of substitution of 0.25.

Figure 2. Distributional Impacts of a 70% Top Rate



(a) Percentage Change in After-tax Income



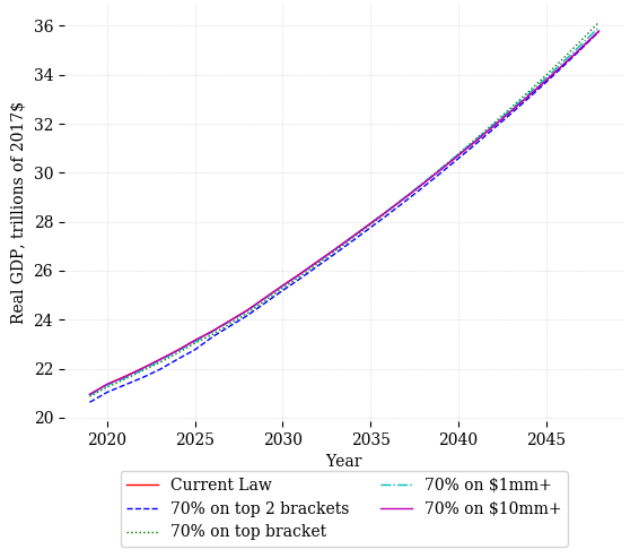
(b) Average Marginal Tax Rates

deficits will consistently reduce to private investment. Thus the positive effects on the government budget start to attenuate the negative incentive effects that the high marginal tax rates have. Figure 4 shows how the debt-to-GDP ratio is reduced under the alternative policies. In 2035, the Congressional Budget Office (CBO) forecasts a debt-to-GDP ratio of about 110%. With a 70% tax rate on all income in the top two brackets, we forecast the debt-to-GDP ratio will be closer to 100%. As we move further out into the future, the effects of accumulating more an more government debt under current law mean that these revenue raising reforms help to reduce the debt and the reduction in the crowding out means that the costs of these policies in terms of lower GDP are reduced over time.

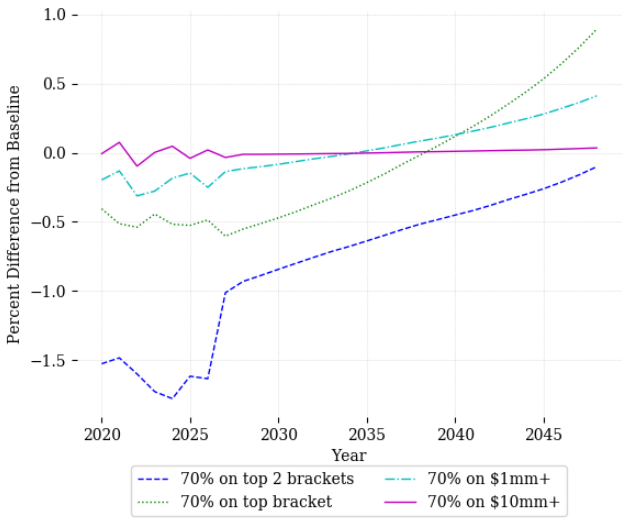
The effects on GDP and debt are much more modest under the policies that affect only income at the very top. For instance, GDP in 2020 declines by less 0.1% when the 70% marginal tax rate applies to only incomes about $10 million.

Interestingly, in 2035 and beyond, the policies of increasing marginal tax rates on the top bracket (under current law) or on incomes exceeding $1 million result in higher GDP than under the baseline. Again, there are two major effects going on in the macroeconomic model. Higher marginal tax rates are inducing taxpayers to work, save, and invest less and this lowers GDP. On the other hand, the increase in revenues do help to slow the growth rate in the federal debt. Lower debt results in lower interest rates, which will increase investment demand by firms and, as a result of the increase in capital, increase the wages of workers. In the longer run, the second effect dominates for policies where the 70% rate is applied to income in the top bracket or to income above $1 million. When the high top rate is applied only to incomes of $10 million and higher, these effects approximately cancel out in the longer run. If the rate is applied further down the income

Figure 3. Real GDP, 2019-2049



(a) Gross Domestic Product



(b) Percentage Differences from Baseline GDP

distribution, to all income in the top two brackets, then the former effects dominate and GDP remains depressed through 2049.

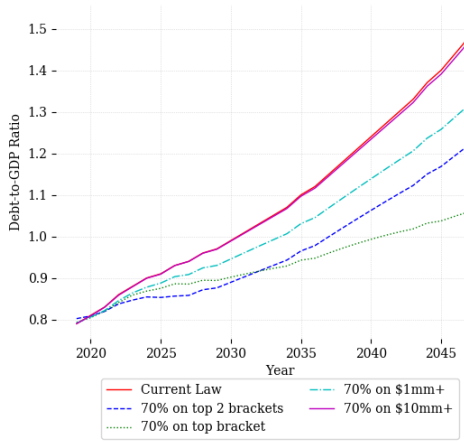


Figure 4. Debt-to-GDP, 2019-2049

3. Caveats and Complicating Factors

While we do provide microsimulation results that account for some behavioral responses, we present results for only one elasticity. Responses of taxpayers to higher tax rates may be especially pronounced at the top of the income distribution, where economists typically find larger elasticities of taxable income (see Gruber and Saez (2002)). Increasing the elasticity above the value of 0.25 used here would lower the revenue estimates and the tax burden on taxpayers.

While the macroeconomic results do account for the responses of filers to changes in incentives to work and save, there are important margins of response not measured here. For example, tax avoidance activities, particularly those that shift income outside of the domestic economy or into the corporate sector, could have additional impacts on GDP and other macroeconomic aggregates, as well as the welfare costs of taxation. Migration out of (or slowed emigration into) the United States by top earners may be a consideration with such high marginal tax rates, but is not modeled here. Accounting for such behavior would increase the economic costs of the tax policy changes analyzed. Finally, the assumption of a closed economy means that government debt crowds out private investment and pushes interest rates upward. Due to this, policies that raise revenue will have more positive economic effects than would be the case if foreign capital flows could be used to finance government spending and domestic investment.

4. Summary

We find that the high marginal tax rate on top earners could generate modest revenue over the next 10 years, especially after considering behavior responses to the high marginal tax rates. A marginal tax rate of 70% on incomes above $10 million would increase revenues by about $107 billion dollars over the budget window.

The macroeconomic effects of such a policy are mixed. High income taxpayers would reduce their labor supply and savings rates and this would negatively affect GDP. However, these effects are mostly limited to the next 20 years. After that, the negative incentive effects from higher marginal tax rates are offset by the lower interest rates that result from the government using the increased revenues to lower the national

debt.

Modeling Notes

Tax-Calculator

Tax-Calculator (release 0.23.4) is an open source microsimulation model that is able to simulate a rich set of policy changes to the U.S. federal individual income tax system. In conjunction with micro data that represent the U.S. population and a set of behavioral assumptions, Tax-Calculator can be used to conduct static revenue scoring and distributional analyses of tax policies. All documentation and code are available in the Tax-Calculator GitHub repository (https://github.com/PSLmodels/Tax-Calculator).

OG-USA

OG-USA is an open source dynamic general equilibrium overlapping generations model of the U.S. economy. The OG-USA model is written in Python and includes realistic demographics, productivity growth, household response to consumption, labor supply, and savings, intended and unintended bequests, realistic household taxes, government ability to run deficits and surpluses, and a closed economy or small open economy option. All documentation and code are available in the OG-USA GitHub repository (https://github.com/PSLmodels/OG-USA). Careful documentation for the OG-USA model, its derivation, output, and solution method is available in the OG-USA repository.

Modeling Assumptions

Our simulations from OG-USA assume a closed-economy, no Federal Reserve response to changes in interest rates, a budget closure rule that takes effect in 2039 and reduces government spending to stabilize the debt-to-GDP ratio at 100%. Economic aggregates and prices reported in Figures 3a and 4 are found by applying the percentages changes in these series between a baseline and reform run in OG-USA to the Congressional Budget Office's long-term projections.

References

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